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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/705,591 | 11/10/2003 | Jeong-hwan Lee | SWO-0002 | 6244 |
| 23413 | 7590 | 11/21/2006 | EXAMINER | |
| CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 | | | HAN, JASON | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2875 | |

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|----------------------------|--|
| Office Action Summary | Application No. 10/705,591 | Applicant(s) LEE ET AL. | |
| | Examiner Jason M. Han | Art Unit 2875 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 11, 2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to Claims 20 have been considered but are moot in view of the new ground(s) of rejection.

The following claims have been rejected in light of the specification, but rendered the broadest interpretation as construed by the Examiner and as stated by the Applicant within the context of the claim language [MPEP 2111].

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

Art Unit: 2875

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by

Lemelson (U.S. Patent 2,951,419).

4. With regards to Claim 1, Lemelson discloses a reflector including:

- A base film [Figure 2: (20, 22)];
- A protrusion [Figure 2: (24)] provided on a first surface of the base film, whereby the first surface is substantially flat; and
- A reflecting layer [Figure 2: (28)] deposited on the first surface of the base film where no protrusion is formed and on the protrusion, for reflecting light generated from a lamp [inherent of the reflecting purpose];
- Wherein the protrusion partly covers the first surface of the base film and the reflecting layer contacts with the first surface of the base film.

5. With regards to Claim 5, Lemelson discloses the reflector [Figure 2] including a plurality of protrusions [Figure 2: (24)] having a dotted pattern [Column 3, Lines 18-20].

6. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Kawaguri et al. (U.S. Publication 2004/0021810 A1).

Kawaguri discloses a reflector including:

- A base film [Figure 4B: (111)];
- A protrusion [Figure 4B: (112)] provided on a first surface of the base film, whereby the first surface is substantially flat; and

Art Unit: 2875

- A reflecting layer [Figure 4B: (113)] deposited on the first surface of the base film where no protrusion is formed and on the protrusion, for reflecting light generated from a lamp [inherent of the reflecting purpose];
- Wherein the protrusion partly covers the first surface of the base film and the reflecting layer contacts with the first surface of the base film.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson (U.S. Patent 2,951,419).

Lemelson discloses the claimed invention as cited above. In addition, Lemelson teaches the reflector being made of a flexible resin [Column 4, Lines 2-3], but does not specifically teach the protrusions being made from an elastic material, such as silicon resin.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the reflector of Lemelson to incorporate the silicon resin, since it has been held to be within general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. In this case, it is obvious that one can maintain a specific optical effect

Art Unit: 2875

while utilizing silicon resin in forming the reflector of Lemelson out of one monolithic piece, and thus, simplifying manufacturability.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lemelson (U.S. Patent 2,951,419) as applied to Claim 1 above, and further in view of Sinkoff (U.S. Patent 6724529 B2).

Lemelson discloses the claimed invention as cited above, but does not specifically teach the protrusion being embossed on the base film.

Sinkoff teaches a reflecting apparatus including:

- A base film [Figures 2-4: (60)];
- A protrusion [Figures 2-4: (M)] provided on a first surface of the base film; and
- A reflecting layer [Figures 2-4: (50)] deposited on the base film and the protrusion, for reflecting light generated from a lamp,
- Whereby the protrusion [Figures 2-4: (M)] being embossed on the base film [Column 3, Lines 24-27].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the reflector of Lemelson to incorporate the embossment of the protrusions onto the base film, as principally taught by Sinkoff, in order to provide a simple and efficient manufacturing of the protrusions onto the base film.

9. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguri et al. (U.S. Publication 2004/0021810 A1) as applied to Claim 1 above, and further in view of Yang et al. (U.S. Patent 6151089).

Art Unit: 2875

Kawaguri discloses the claimed invention as cited above, but does not specifically teach the reflector including a deformation prevention part for preventing the base film from being deformed, whereby the deformation prevention part is formed on a second surface of the base film opposite to the first surface (re: Claim 6); wherein the deformation prevention part is embossed on the second surface of the base film (re: Claim 7); nor teaches the reflector including a plurality of the deformation prevention parts having a dotted pattern (re: Claim 8).

Yang teaches a reflector [Figure 2: (8)] including a base film [Figure 2: (15)], whereby a plurality of deformation prevention parts [Figure 2: (12)] in the form of a dotted pattern is provided/embossed on a second surface of the base film opposite to a first surface so as to prevent the film from being deformed [Column 6, Lines 13-40].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the reflector of Kawaguri to incorporate the deformation prevention parts of Yang in order to provide further protection to the shape of the reflecting film, as well as the base film from deforming.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguri et al. (U.S. Publication 2004/0021810 A1) as applied to Claim 1 above, and further in view of Kaminsky et al. (U.S. Patent 6898012 B2).

Kawaguri discloses the claimed invention as cited above. In additions, Kawaguri teaches, "The reflective plates described in the above configurations can be applied to display devices such as reflective type liquid crystal display devices and transfective type liquid crystal display devices" [Page 5, Paragraph 70], but does not teach the

Art Unit: 2875

specifics of said LCD display device including a back light assembly having the reflector identified in Claim 1; a light guide plate disposed on the reflector; and a lamp unit disposed at a side of the light guide plate, for emitting light into the light guide plate.

Kaminsky teaches a light guide plate [Figure 2: (2)] disposed on a reflector; and a lamp unit [Figure 2: (18)] disposed at a side of the light guide plate, for emitting light into the light guide plate.

It would have been obvious to one ordinarily skilled in the art at the time of invention to incorporate the reflector of Kawaguri into the backlight of Kaminsky, in order to provide a reflection plate/film that "comprises protrusions having an ideal tilt angle distribution with reduced flat portions and is excellent in reflective properties such as dispersion properties, and to provide a display device having the reflective plate" [see Kawaguri: Page 3, Paragraph 25].

11. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguri et al. (U.S. Publication 2004/0021810 A1) in view of Kaminsky et al. (U.S. Patent 6898012 B2) as applied to Claim 9 above, and further in view of Hira et al. (U.S. Patent 5961198).

12. With regard to Claims 10 and 13-14, Kawaguri in view of Kaminsky discloses the claimed invention as cited above, but does not specifically teach a plurality of prism teeth formed on a surface of the light guide plate facing the reflector (re: Claim 10), an optical sheet layer disposed on the light guide plate and having a plurality of prism teeth on a surface thereof facing the light guide plate (re: Claim 13), wherein the prism teeth

Art Unit: 2875

of the light guide plate are arranged in a direction across the prism teeth of the optical sheet layer (re: Claim 14).

Hira teaches a plurality of prism teeth [Figures 2, 5, 12: (10)] being formed on a surface of a light guide plate facing a reflector [Figures 5, 10: (11)], an optical sheet layer being disposed on the light guide plate and having a plurality of prism teeth on a surface thereof facing the light guide plate [Figure 3: (4, 5)] Column 3, Lines 21-28], wherein the prism teeth of the light guide plate [Figures 9-11: (10)] being arranged in a direction across the prism teeth of the optical sheet layer [Column 3, Lines 21-28, 44-49].

It would obvious to one ordinarily skilled in the art at the time of invention to modify the backlight assembly of Kawaguri in view of Kaminsky to incorporate the light guide plate with prism teeth arranged in a direction across a plurality of prism teeth on an optical sheet layer, as taught by Hira, in order to permit a desired optical effect (reflectance) on the illumination, and thus, increase light efficiency of the backlight.

13. With regards to Claim 11, Kawaguri in view of Kaminsky, and further in view of Hira discloses the claimed invention as cited above, but does not specifically teach the protrusion being substantially circular, spherical or cylindrical shaped such that the protrusion of the reflector has a diameter smaller than a pitch of the prism teeth of the light guide plate.

However, it would have been obvious to one ordinarily skilled in the art at the time of invention to modify the protrusion of Kawaguri in view of Kaminsky, and further in view of Hira, which is taught as being circular or spherical in shape [see Kaminsky:

Art Unit: 2875

Column 7, Lines 20-30], to have a diameter smaller than a pitch of the prism teeth of the light guide in order to affect the illumination to a desired preference. It has been held to be within the general skill of a worker that mere change of form or shape of an invention involves only routine skill in the art. *Span-Deck Inc. c. Fab-Con, Inc.* (CA 8, 1982)

215USPQ 835, and a change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955). Kaminsky corroborates, "The plurality of lenses of all different sizes and shapes are formed on top of one another to create a complex lens feature resembling a cauliflower" [Column 7, Lines 20-24].

14. With regards to Claim 12, Kawaguri in view of Kaminsky, and further in view of Hira discloses the claimed invention as cited above, but does not specifically teach an interval between the adjacent protrusions on the base film varying in inverse proportion to a distance between the protrusions and the lamp unit.

However, it would have been obvious to one ordinarily skilled in the art at the time of invention to rearrange the adjacent protrusions on the base film to vary in inverse proportion to a distance between the protrusions and the lamp, whereby it is commonly known that reflecting dots on the bottom of a light guide are often spread in a similar manner to produce a more uniform illumination. It has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70.

15. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguri et al. (U.S. Publication 2004/0021810 A1) in view of Kaminsky et al. (U.S.

Art Unit: 2875

Patent 6898012 B2) as applied to Claim 9 above, and further in view of Yang et al. (U.S. Patent 6151089).

Kawaguri in view of Kaminsky discloses the claimed invention as cited above, but does not specifically teach the reflector including a deformation prevention part for preventing the base film from being deformed, whereby the deformation prevention part is formed on a second surface of the base film opposite to the first surface (re: Claim 15).

Yang teaches a reflector [Figure 2: (8)] including a base film [Figure 2: (15)], whereby a plurality of deformation prevention parts [Figure 2: (12)] in the form of a dotted pattern is provided/embossed on a second surface of the base film opposite to a first surface so as to prevent the film from being deformed [Column 6, Lines 13-40].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the reflector of Kawaguri in view of Kaminsky to incorporate the deformation prevention parts of Yang in order to provide further protection to the shape of the reflecting film, as well as the base film from deforming.

16. Claims 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguri et al. (U.S. Publication 2004/0021810 A1) in view of Kaminsky et al. (U.S. Patent 6898012 B2) as applied to Claim 9 above, and further in view of Hira et al. (U.S. Patent 5961198).

17. With regard to Claims 16 and 19-20, Kawaguri in view of Kaminsky discloses the claimed invention as cited above, but does not specifically teach a plurality of prism teeth formed on a surface of the light guide plate facing the reflector (re: Claim 16), an

Art Unit: 2875

optical sheet layer disposed on the light guide plate and having a plurality of prism teeth on a surface thereof facing the light guide plate (re: Claim 19), wherein the prism teeth of the light guide plate are arranged in a direction across the prism teeth of the optical sheet layer (re: Claim 20).

Hira teaches a plurality of prism teeth [Figures 2, 5, 12: (10)] being formed on a surface of a light guide plate facing a reflector [Figures 5, 10: (11)], an optical sheet layer being disposed on the light guide plate and having a plurality of prism teeth on a surface thereof facing the light guide plate [Figure 3: (4, 5)] Column 3, Lines 21-28], wherein the prism teeth of the light guide plate [Figures 9-11: (10)] being arranged in a direction across the prism teeth of the optical sheet layer [Column 3, Lines 21-28, 44-49].

It would obvious to one ordinarily skilled in the art at the time of invention to modify the backlight assembly of Kawaguri in view of Kaminsky to incorporate the light guide plate with prism teeth arranged in a direction across a plurality of prism teeth on an optical sheet layer, as taught by Hira, in order to permit a desired optical effect (reflectance) on the illumination, and thus, increase light efficiency of the backlight.

18. With regards to Claim 17, Kawaguri in view of Kaminsky, and further in view of Hira discloses the claimed invention as cited above, but does not specifically teach the protrusion being substantially circular, spherical or cylindrical shaped such that the protrusion of the reflector has a diameter smaller than a pitch of the prism teeth of the light guide plate.

Art Unit: 2875

However, it would have been obvious to one ordinarily skilled in the art at the time of invention to modify the protrusion of Kawaguri in view of Kaminsky, and further in view of Hira, which is taught as being circular or spherical in shape [see Kaminsky: Column 7, Lines 20-30], to have a diameter smaller than a pitch of the prism teeth of the light guide in order to affect the illumination to a desired preference. It has been held to be within the general skill of a worker that mere change of form or shape of an invention involves only routine skill in the art. *Span-Deck Inc. c. Fab-Con, Inc.* (CA 8, 1982) 215USPQ 835, and a change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955). Kaminsky corroborates, "The plurality of lenses of all different sizes and shapes are formed on top of one another to create a complex lens feature resembling a cauliflower" [Column 7, Lines 20-24].

19. With regards to Claim 18, Kawaguri in view of Kaminsky, and further in view of Hira discloses the claimed invention as cited above, but does not specifically teach an interval between the adjacent protrusions on the base film varying in inverse proportion to a distance between the protrusions and the lamp unit.

However, it would have been obvious to one ordinarily skilled in the art at the time of invention to rearrange the adjacent protrusions on the base film to vary in inverse proportion to a distance between the protrusions and the lamp, whereby it is commonly known that reflecting dots on the bottom of a light guide are often spread in a similar manner to produce a more uniform illumination. It has been held that

Art Unit: 2875

rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jason M Han
Examiner
Art Unit 2875

JMH (11/13/2006)



Sandra O'Shea
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